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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,866	09/11/2003	Honorio T. Granada	018865-004410US	8678

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EXAMINER

OWENS, DOUGLAS W

ART UNIT PAPER NUMBER

2811

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/660,866

Applicant(s)

GRANADA ET AL.

Examiner

Douglas W. Owens

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/19/03; 11/19/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 9, 10 and 12 – 14 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,629,835 to Mahulikar et al.

Regarding claim 1, Mahulikar et al. teach a method of making a chip device (Fig. 13, for example), comprising:

providing a die (54);

providing a leadframe (62) including a die attach cavity and a plurality of dimples defined around a periphery of the leadframe (Col. 7, lines 34 – 39), the die attach cavity having substantially the same thickness as the die;

placing solder balls into the dimples; and

flipping the die into the die attach cavity and attaching it therein.

Regarding claim 10, Mahulikar et al. teach a method, wherein the die provided is a bumped die.

Regarding claim 12, Mahulikar et al. teach a method, further comprising placing solder (70) on the die.

Regarding claim 13, Mahulikar et al. teach a method, wherein the leadframe comprises a copper based alloy (Col. 7, lines 11 – 16).

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Regarding claim 14, Mahulikar et al. teach a method, wherein the leadframe includes a solderable coating (64).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mahulikar et al. as applied to claim 9 above, and further in view of US Patent No. 6,627,991 to Joshi.

Regarding claim 11, Mahulikar et al. do not teach a method, wherein the die comprises a MOSFET. Joshi teaches a method of making a chip device, wherein the die comprises a MOSFET (Fig. 8; Col. 5, lines 20 – 53, for example). It would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the teaching of Joshi into the method taught by Mahulikar et al., since the chip and chip device are ideally suited for a MOSFET, or power MOSFET. Furthermore, chip commonly include MOSFETs for use in memory and logic devices for example.

Regarding claim 15, Mahulikar et al. do not teach a method, wherein the die comprises source and gate connections. Joshi teaches a method wherein the die includes source and gate connections. It would have been obvious to one of ordinary

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skill in the art to incorporate the teaching of Joshi into the method taught by Mahulikar et al. for reasons discussed above.

5. Claim 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Mahulikar et al. as applied to claim 1 above, and further in view of US Patent No. 6,344,687 to Huang et al.

Mahulikar et al. do not teach a method, wherein the leadframe comprises an Ni-Pd coating. Huang et al. teach a method, wherein the leadframe comprises an Ni-Pd coating (210; Col. 3, lines 31 and 32). It would have been desirable to one of ordinary skill in the art to incorporate the method taught by Huang et al. since it desirable to provide layers with high solderability.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas W. Owens whose telephone number is 571-272-1662. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, reading "Douglas W. Owens". The signature is written in a cursive, flowing style.

Douglas W Owens  
Examiner  
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